

mum

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Ventajas competitivas de la implementación de PPPoE Server / Client sobre MikroTik

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Implementaciones comunes para control de acceso:

- HOTSPOT

- * Administración y control de trafico centralizado.
- * Trafico de **Broadcast**.
- * Vulnerabilidad media.
- * Multidifusion sobre capa 2.

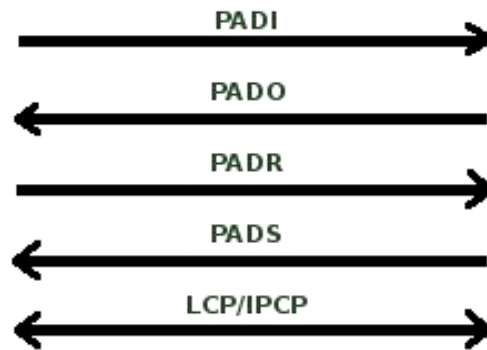
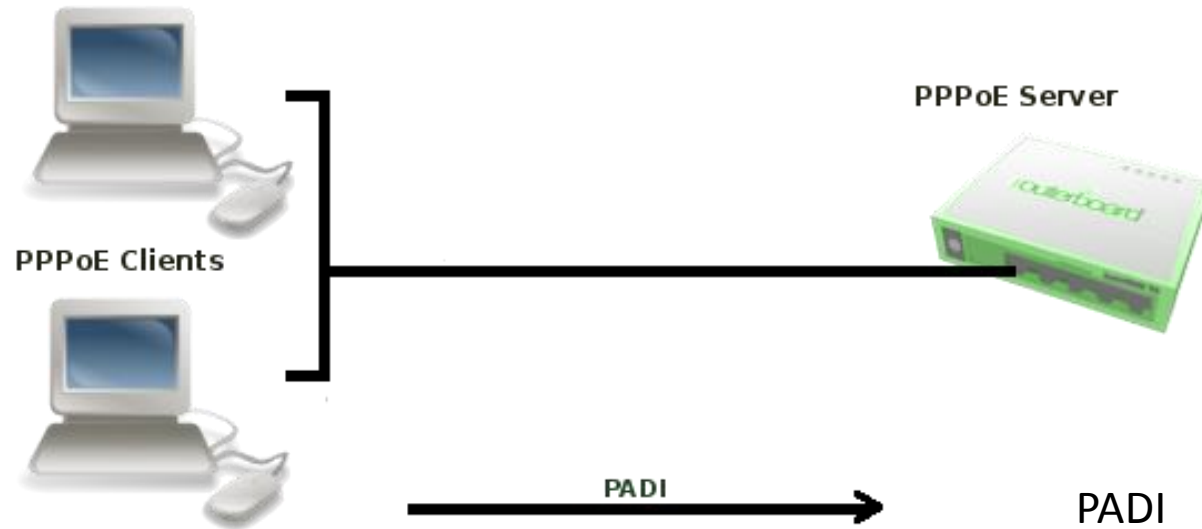
- TABLA ARP

- * Administración y control de trafico centralizado TEDIOSO
- * Trafico de **Broadcast**.
- * Muy vulnerable.
- * Control de ancho de banda manual
- * Multidifusion sobre capa 2.

Características PPPoE: (Point-to-Point Protocol over Ethernet - RFC 2516)

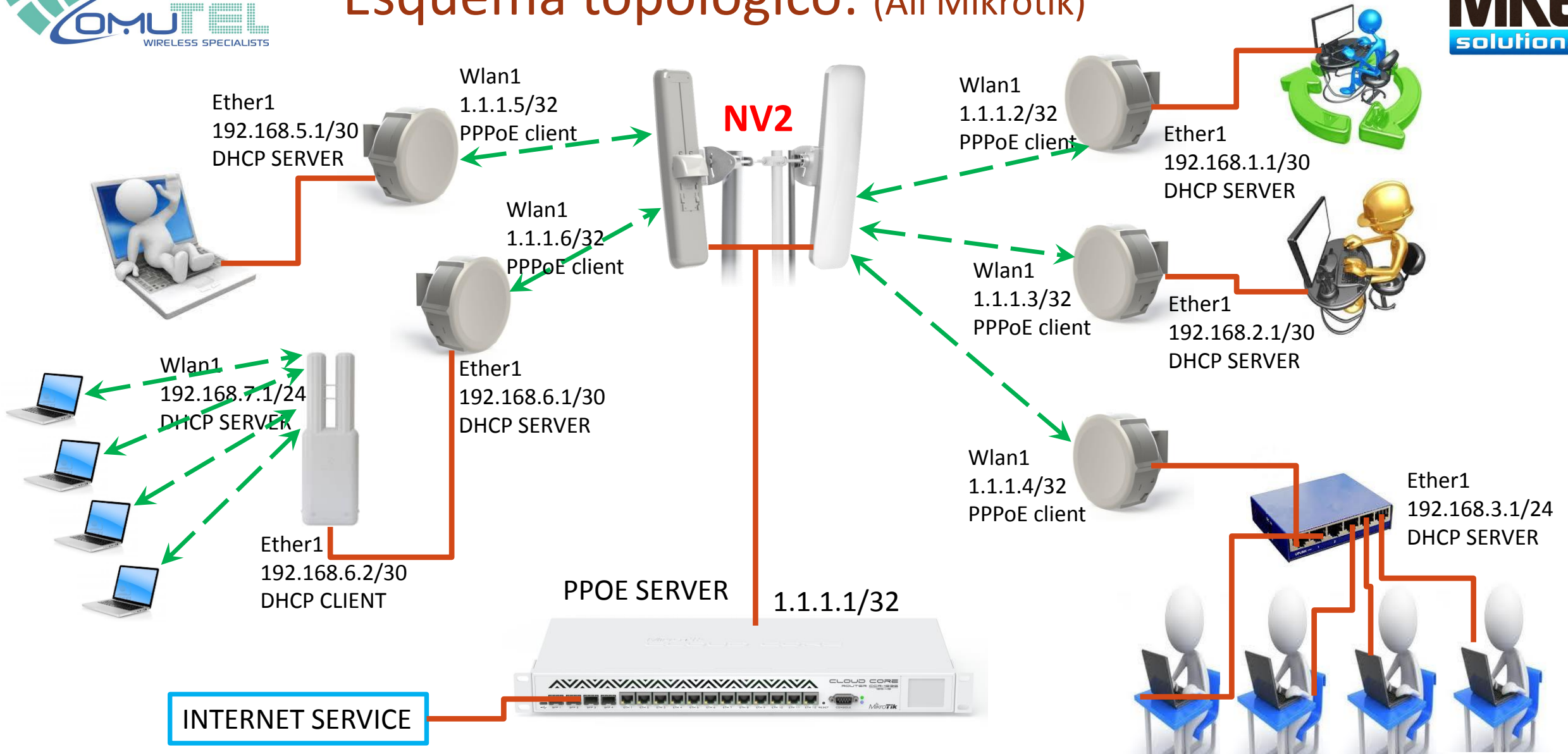
- * Administración y control de tráfico flexible.
- * Es posible realizar implementaciones con enrutamiento OSPF y MPLS sobre PPOE
- * Tráfico encapsulado de paquetes sobre Capa3, cero broadcast.
- * Vulnerabilidad nula.
- * No existe multidifusión, IP/32
- * Conectividad múltiple y simultánea para servicios diferenciados.
- * Soporta autenticación asociada a External Radius Server y User Manager
- * Control y administración personalizada sobre el equipo del usuario. (MikroTik)
- * Preparado para IPV6
- * Encriptación MPPE 40bit y MPPE 128bit RSA.

Funcionamiento Lógico:

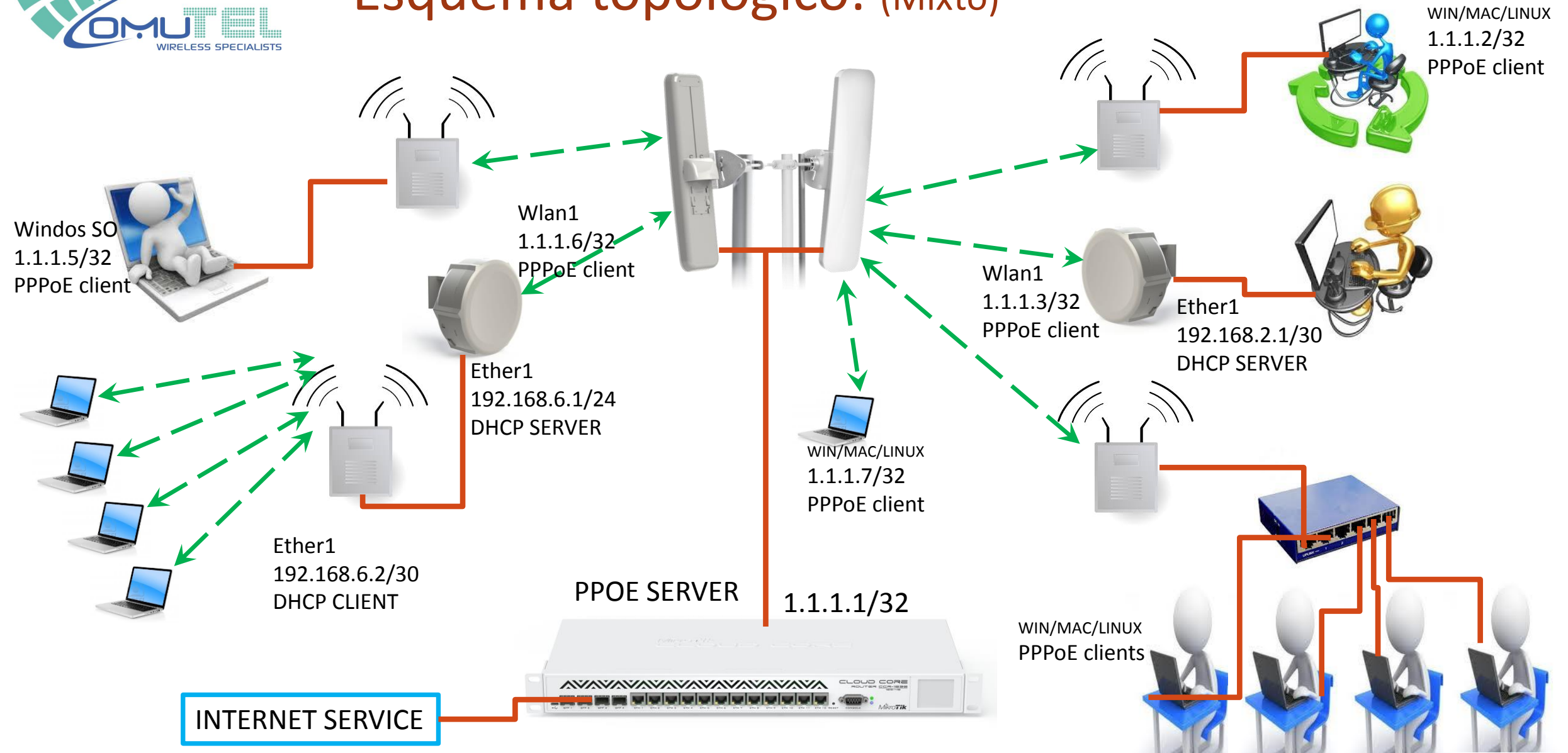


PADI	PPPoE Active Discovery Initialization
PADO	PPPoE Active Discovery Offer
PADR	PPPoE Active Discovery Request
PADS	PPPoE Active Discovery Session confirmation
WORK AND OPERATION	
PDAT	PPPoE Active Discovery Terminate

Esquema topológico: (All Mikrotik)



Esquema topológico: (Mixto)

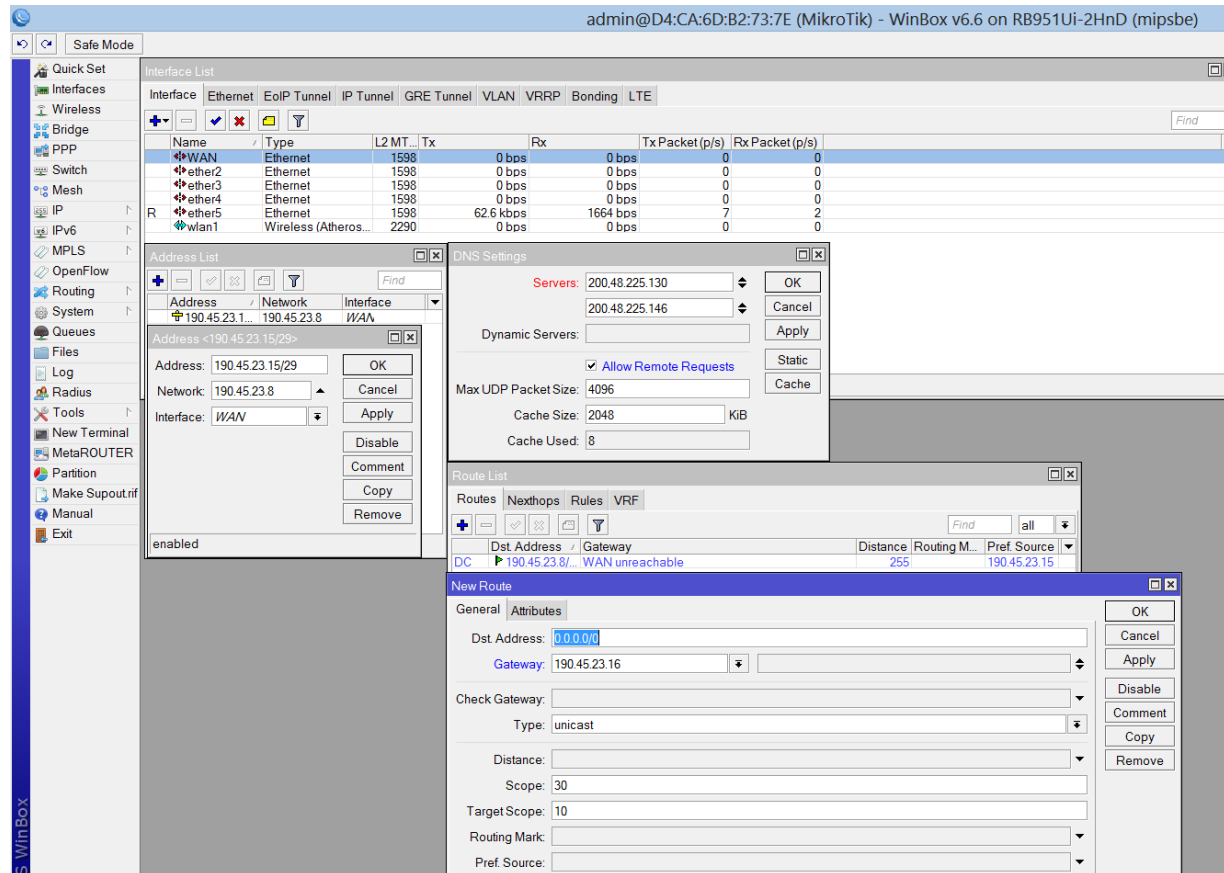


Ventajas competitivas PPPoE Server / Client:

1. Implementación de reglas a todo nivel, muy personalizadas sobre el equipo cliente.
2. Facilidad de implementación de reglas sin afectar a TODOS los usuarios por un requerimiento específico.
3. Uso de protocolo NV2 y las ventajas que este involucra.
4. Eliminación total de tráfico de broadcast y propagación de contenido no deseado sobre la LAN
5. Por las características técnicas de los CPE MikroTik, enlaces eficientes, estables y seguros a distancias muy considerables.
6. Flexibilidad de administración por la compatibilidad con Radius Server, User manager, enrutamiento MPLS y OSPF.
7. Liberación de carga de procesamiento al Router Core.
8. Ahorro en mantenimiento, consultoría y/o “desastres involuntarios”.
9. Capacidad de crecimiento seguro, flexible y ordenado.

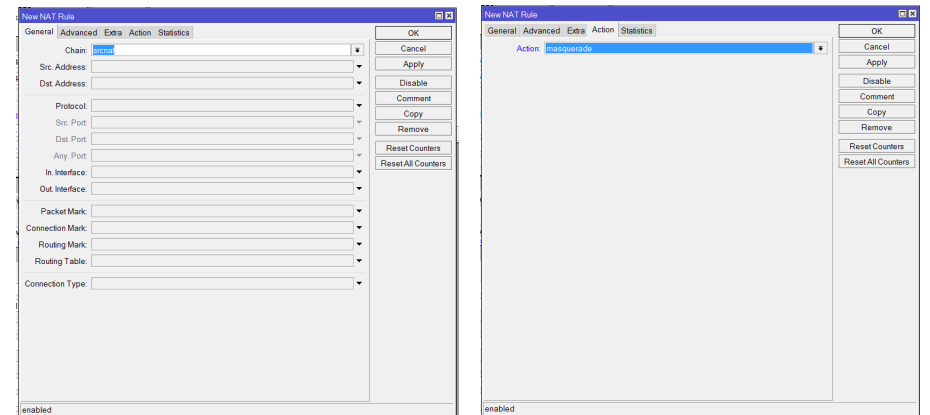
Configuración PPPoE Server: (Acceso a Internet)

* IP de acceso a internet sobre la interface WAN, IP's DNS Server del proveedor, Gateway. (IP route), NAT .



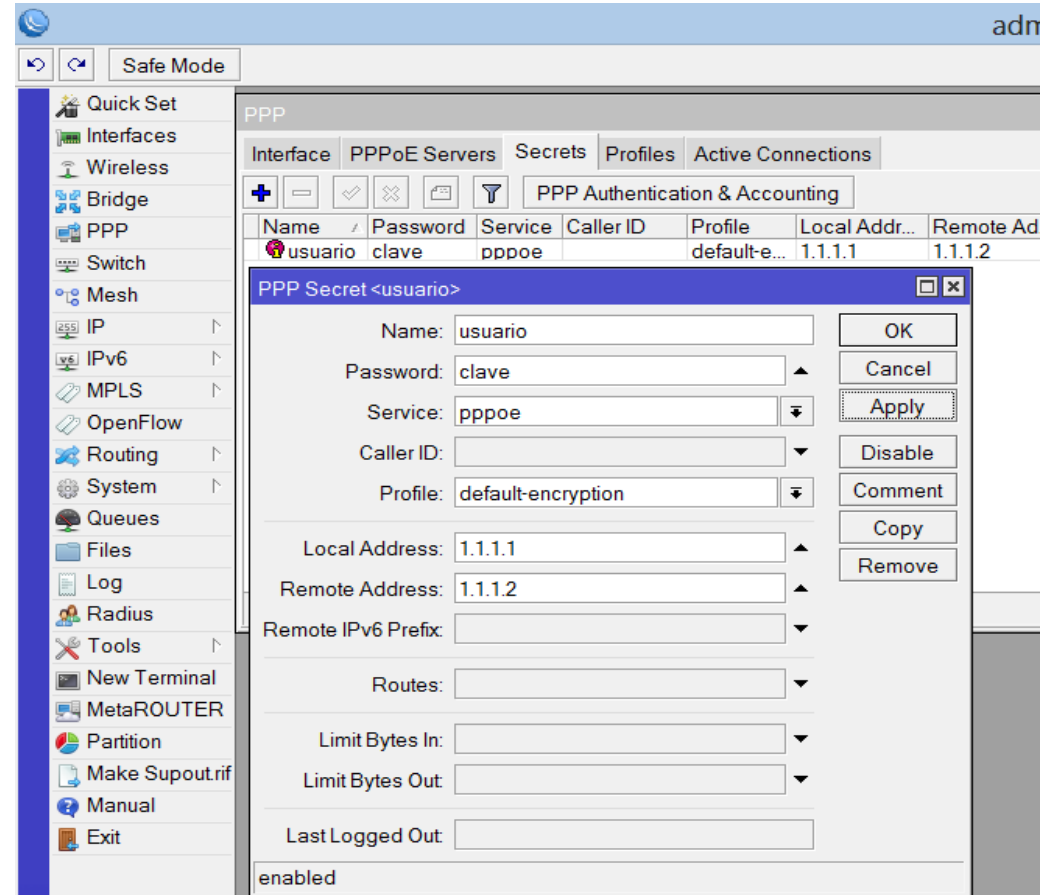
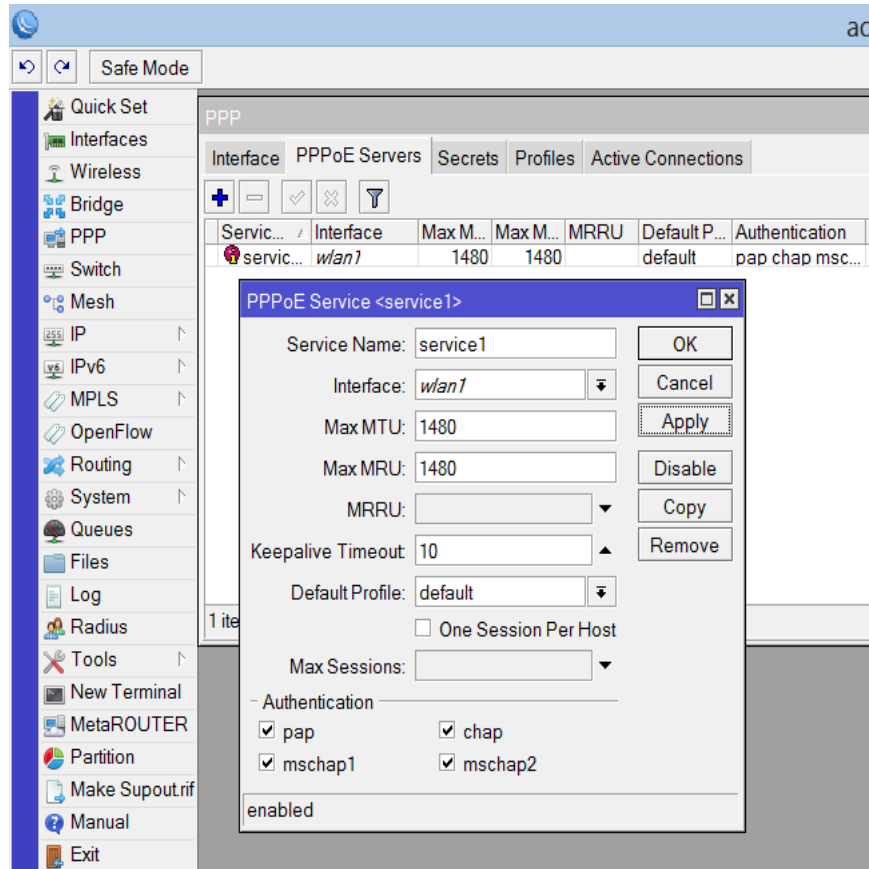
The WinBox interface shows the configuration of a PPPoE Server. The left sidebar contains a tree view with categories like Quick Set, Interfaces, Wireless, Bridge, PPP, Switch, Mesh, IP, IPv6, MPLS, OpenFlow, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, MetaROUTER, Partition, Make Supoutrif, Manual, and Exit. The main window displays the 'Interface List' table, which includes columns for Name, Type, L2 MT, Tx, Rx, Tx Packet (p/s), and Rx Packet (p/s). The table lists interfaces: WAN (Wireless), ether2 (Ethernet), ether3 (Ethernet), ether4 (Ethernet), ether5 (Ethernet), and wlan1 (Wireless (Atheros...)). Below the table, the 'Address List' window is open, showing the configuration for the WAN interface. The 'Address List' window has fields for Address (190.45.23.15/29), Network (190.45.23.8), and Interface (WAN). The 'DNS Settings' window is also open, showing the configuration for the WAN interface. The 'DNS Settings' window has fields for Servers (200.48.225.130, 200.48.225.146), Dynamic Servers, Max UDP Packet Size (4096), Cache Size (2048), and Cache Used (8). The 'Route List' window is open, showing the configuration for the WAN interface. The 'Route List' window has fields for Dst Address (190.45.23.8/29), Gateway (WAN unreachable), Distance (255), and Pref. Source (190.45.23.15). The 'New Route' window is open, showing the configuration for the WAN interface. The 'New Route' window has fields for Dst Address (0.0.0.0/0), Gateway (190.45.23.16), Check Gateway, Type (unicast), Distance, Scope (30), Target Scope (10), Routing Mark, and Pref. Source.

* IP -> Firewall-> Enmascaramiento

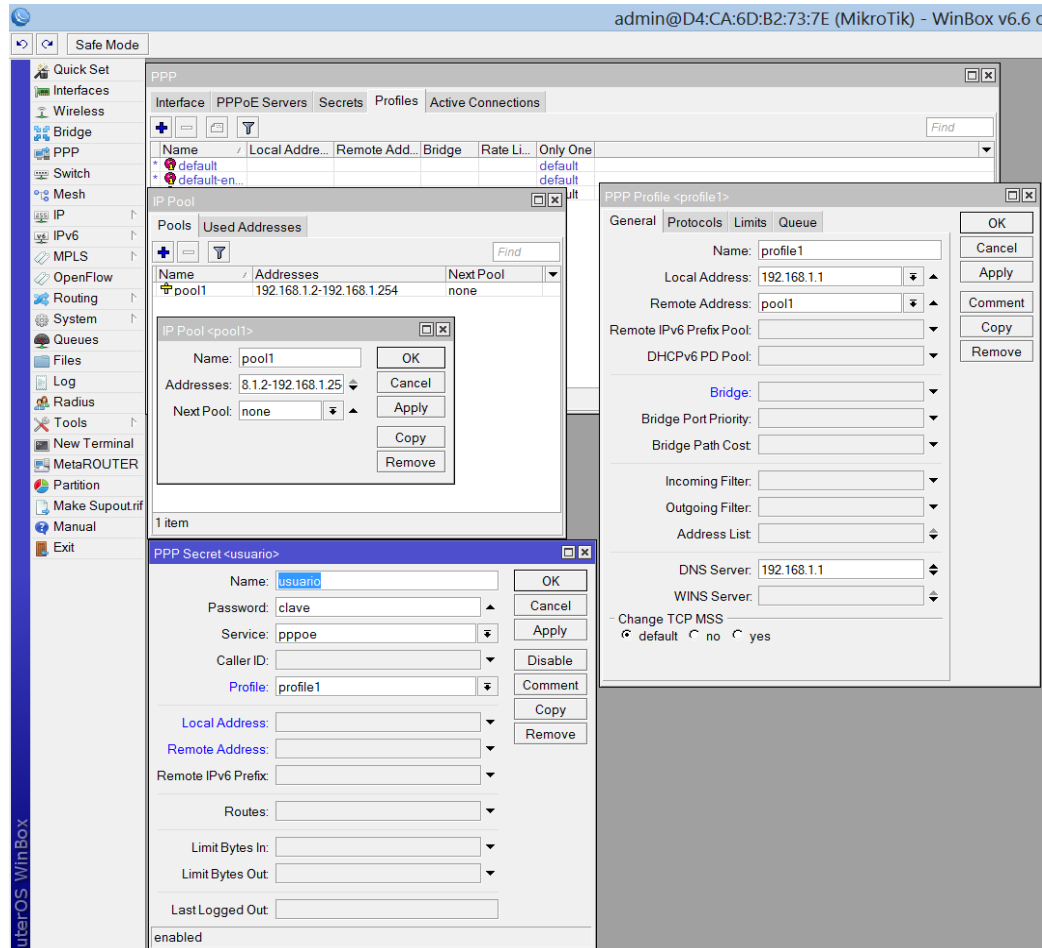


The WinBox interface shows the configuration of a Firewall rule. The 'New NAT Rule' window is open, showing the configuration for the WAN interface. The 'New NAT Rule' window has tabs for General, Advanced, Extra, Action, and Statistics. The 'General' tab is selected, showing fields for Chain (WAN), Src Address, Dst Address, Protocol, Src Port, Dst Port, In Interface, Out Interface, Packet Mark, Connection Mark, Routing Mark, Routing Table, and Connection Type. The 'Action' tab is also visible, showing the configuration for the WAN interface. The 'Action' tab has fields for Action (masquerade), Chain (WAN), and various other settings. The 'New NAT Rule' window is enabled.

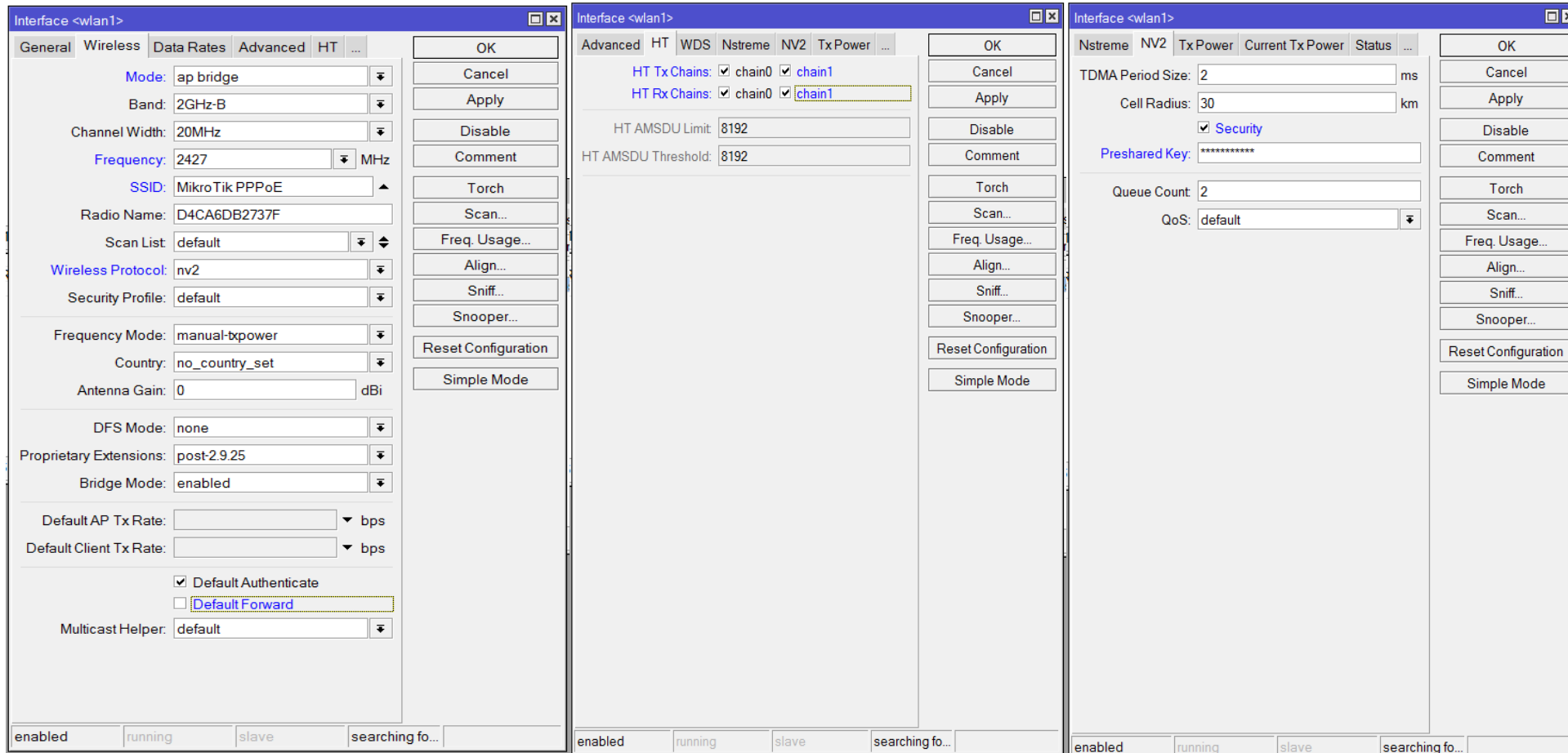
Implementación de PPPoE Server:



Implementación de PPPoE Server: (Profiles y pool add.)



Configuración de la interface Wlan sobre NV2



The image displays three screenshots of the MikroTik WinBox configuration interface for the wlan1 interface, showing the General, Advanced, and NV2 tabs.

General Tab:

- Mode: ap bridge
- Band: 2GHz-B
- Channel Width: 20MHz
- Frequency: 2427 MHz
- SSID: MikroTik PPPoE
- Radio Name: D4CA6DB2737F
- Scan List: default
- Wireless Protocol: nv2
- Security Profile: default
- Frequency Mode: manual-txpower
- Country: no_country_set
- Antenna Gain: 0 dBi
- DFS Mode: none
- Proprietary Extensions: post-2.9.25
- Bridge Mode: enabled
- Default AP Tx Rate: bps
- Default Client Tx Rate: bps
- Default Authenticate: ☒ Default Authenticate
- Default Forward: ☐ Default Forward
- Multicast Helper: default

Advanced Tab:

- HT Tx Chains: ☒ chain0 ☒ chain1
- HT Rx Chains: ☒ chain0 ☒ chain1
- HT AMSDU Limit: 8192
- HT AMSDU Threshold: 8192

NV2 Tab:

- TDMA Period Size: 2 ms
- Cell Radius: 30 km
- Security: ☒ Security
- Preshared Key: *****
- Queue Count: 2
- QoS: default

Configuración del PPPoE client. (Conexión WIFI)

Interface <wlan1>

General

Wireless

Data Rates

Advanced

HT

WDS

...

Mode: station

Band: 2GHz-B

Channel Width: 20MHz

Frequency: 2427 MHz

SSID: MikroTik PPPoE

Radio Name: D4CA6DB2737F

Scan List: default

Wireless Protocol: nv2

Security Profile: default

Frequency Mode: manual-bxpower

Country: no_country_set

Antenna Gain: 0 dBi

DFS Mode: none

Proprietary Extensions: post-2.9.25

Bridge Mode: enabled

Default AP Tx Rate: bps

Default Client Tx Rate: bps

☒ Default Authenticate

☐ Default Forward

Multicast Helper: default

OK

Cancel

Apply

Disable

Comment

Torch

Scan...

Freq. Usage...

Align...

Sniff...

Snooper...

Reset Configuration

Simple Mode

enabled

running

slave

running ap

Interface <wlan1>

Advanced

HT

WDS

Nstreme

NV2

Tx Power

...

HT Tx Chains: ☒ chain0 ☒ chain1

HT Rx Chains: ☒ chain0 ☒ chain1

HT AMSDU Limit: 8192

HT AMSDU Threshold: 8192

OK

Cancel

Apply

Disable

Comment

Torch

Scan...

Freq. Usage...

Align...

Sniff...

Snooper...

Reset Configuration

Simple Mode

enabled

running

slave

searching fo...

Interface <wlan1>

Nstreme

NV2

Tx Power

Current Tx Power

Status

...

☒ Security

Preshared Key: *****

OK

Cancel

Apply

Disable

Comment

Torch

Scan...

Freq. Usage...

Align...

Sniff...

Snooper...

Reset Configuration

Simple Mode

enabled

running

slave

running ap

Configuración del PPPoE client. (Interface)

admin@D4:CA:6D:AF:A0:1E (MikroTik) - WinBox v6.6 on RB951Ui-2HnD (mipsbe)

Safe Mode

Interface <pppoe-out1>

General | Dial Out | Status | Traffic

Name: pppoe-out1

Type: PPPoE Client

L2 MTU: 1480

Max MTU: 1480

Max MRU: 1480

MRRU: [dropdown]

Interfaces: wlan1

OK Cancel Apply Disable Comment Copy Remove Torch PPPoE Scan

enabled running slave Status: connected

Wireless Tables

Interfaces | Nstreme Dual | Access List | Registration | Connect List | Security Profiles | Channels

Scanner | Freq. Usage | Alignment | Wireless Sniffer | Wireless Snooper

Name	Type	L2 MTU	Tx	Rx	Tx Packet (p/s)	Rx Packet (p/s)	MAC Address	ARP	Mode	Band	Chan...	Frequ...	SSID
R wlan1	Wireless (Atheros...	2290	0 bps	0 bps	0	0	0 D4:CA:6D:AF:A...	enabl...	station	2GH...	20M...	2427	MikroTi...

1 item out of 7

RouterOS WinBox

PPP

Interface | PPPoE Servers | Secrets | Profiles | Active Connections

PPP Scanner | PPTP Server | SSTP Server | L2TP Server | OVPN Server | PPPoE Scan | Find

Name	Type	L2 MTU	Tx	Rx	Tx Packet (p/s)	Rx Packet (p/s)
R *pppoe-out1	PPPoE Client		0 bps	0 bps	0	0

1 item out of 7 (1 selected)

admin@D4:CA:6D:AF:A0:1E (MikroTik) - WinBox v6.6 on RB951Ui-2HnD (mipsbe)

Safe Mode

Interface <pppoe-out1>

General | Dial Out | Status | Traffic

Service: [dropdown]

AC Name: [dropdown]

User: usuario

Password: clave

Profile: default

Keepalive Timeout: 60

☐ Dial On Demand

☐ Use Peer DNS

☒ Add Default Route

Default Route Distance: 1

- Allow

☒ pap ☒ chap

☒ mschap1 ☒ mschap2

OK Cancel Apply Disable Comment Copy Remove Torch PPPoE Scan

enabled running slave Status: connected

Route List

Routes | Nexthops | Rules | VRF

Dst Address	Gateway	Distance	Routing M...	Pref	Source
DAS 0.0.0.0/0	192.168.1.1 reachable pppoe-out1	1			
DAC 192.168.1.1	pppoe-out1 reachable	0			192.168.1.2

2 items

Configuración del PPPoE client. (Nat Masquerade)

New NAT Rule

General Advanced Extra Action Statistics

Chain:

Src. Address:

Dst Address:

Protocol:

Src. Port:

Dst Port:

Any. Port:

In. Interface:

Out Interface:

Packet Mark:

Connection Mark:

Routing Mark:

Routing Table:

Connection Type:

OK
Cancel
Apply
Disable
Comment
Copy
Remove
Reset Counters
Reset All Counters

enabled

New NAT Rule

General Advanced Extra Action Statistics

Action:

OK
Cancel
Apply
Disable
Comment
Copy
Remove
Reset Counters
Reset All Counters

enabled

Implementación de la LAN para el cliente:

admin@D4:CA:6D:B2:73:7E (MikroTik) - Win

Safe Mode

Quick Set

Interfaces

Wireless

Bridge

PPP

Switch

Mesh

IP

IPv6

MPLS

OpenFlow

Routing

System

Queues

Files

Log

Radius

Tools

Address List

Address	Network	Interface
190.45.23.1...	190.45.23.8	WAN
192.168.2.1/...	192.168.2.0	ether2

Address <192.168.2.1/30>

Address: 192.168.2.1/30

Network: 192.168.2.0

Interface: ether2

OK

Cancel

Apply

Disable

Comment

Copy

Remove

enabled

DHCP Server

DHCP

Networks

Leases

Options

Option Sets

Alerts

DHCP Config

DHCP Setup

Find

Name	Interface	Relay	Lease Time	Address P...	Ad
------	-----------	-------	------------	--------------	----

DHCP Setup

Select interface to run DHCP server on

DHCP Server Interface: ether2

Back

Next

Cancel

0 items

Referencias:

<http://www.raspppoe.com/>

http://www.mediafire.com/download/z5jjsbn2um5kcuj/PPPoE+for+Android_1.9.1.rar

http://support.apple.com/kb/HT2301?viewlocale=es_ES

<http://wiki.mikrotik.com/wiki/Manual:Interface/PPPoE>

http://wiki.mikrotik.com/wiki/Manual:MPLS_over_PPPoE

http://wiki.mikrotik.com/wiki/PPPOE_Server

http://wiki.mikrotik.com/wiki/Pppoe_server_with_profiles

http://wiki.mikrotik.com/wiki/OSPF_and_PPPoE_Setup

http://wiki.mikrotik.com/wiki/User_Manager/PPP_Example

http://wiki.mikrotik.com/wiki/Pppoe_with_external_radius

http://wiki.mikrotik.com/wiki/Creating_a_pppoe_server

http://wiki.mikrotik.com/wiki/Manual:IPv6_PD_over_PPP

http://wiki.mikrotik.com/wiki/User_Manager/4/PPP_Setup

GRACIAS ECUADOR !!!

